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EXAMINER	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/646,472	Applicant(s) WAKEAM ET AL.	
	Examiner Chelcie Daye	Art Unit 2161	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 April 2007.
 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 7-12 and 19-30 is/are pending in the application.
 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
 5) ☐ Claim(s) _____ is/are allowed.
 6) ☒ Claim(s) 7-12 and 19-30 is/are rejected.
 7) ☐ Claim(s) _____ is/are objected to.
 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☐ All b) ☐ Some * c) ☐ None of:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This action is issued in response to applicant's amendment filed on April 27, 2007.
2. Claims 7-12 and 19-30 are presented. No claims are added and claims 1-6 and 13-18 remain cancelled.
3. Claims 7-12 and 19-30 are pending.
4. Applicant's arguments filed June 03, 2007, have been fully considered but they are not persuasive.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. **Claims 7,9,19, and 21, are rejected under 35 U.S.C. 103(a) as being unpatentable over Holenstein (US Patent Application No. 20020133507) filed on March 29, 2002, in view of Souder (US Patent No. 5,806,074) filed on March 19, 1996.**

Regarding Claims 7 and 19, Holenstein discloses a method of reconciling a first data structure stored on a computer readable medium with a second data structure stored on a computer readable medium, comprising:

determining which node of the second data structure has received a change from a corresponding node in the first data structure (Fig.1; [0025], lines 1-6, Holenstein)¹; and

for each node in the second data structure determined to have received a change from a corresponding node in the first data structure (Fig.1; [0027], lines 1-4, and [0036], lines 1-2, Holenstein)², attempting to access the corresponding node in the first data structure ([0052-0053], Holenstein); when the corresponding node in the first data structure is inaccessible, preventing the change from occurring in the second data structure ([0157], lines 10-19, Holenstein). Holenstein's replication system does recognize that while performing dual writes and having to reconcile data structures collisions will occur. However, Holenstein is silent with respect to, when the corresponding node in the first data structure is accessible, determining, that the change to the second data structure creates a mandatory collision. On the other hand, Souder discloses when the corresponding node in the first data structure can be accessed, determining, that the change to the second data structure creates a mandatory collision (column 11, lines 8-36, Souder). It would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate Souder's teachings into the Holenstein system. A skilled artisan would have been motivated to combine as suggested by Souder at column 5, lines 17-45, in order to present a system that

¹ Examiner Notes: Fig.1 shows data structures 14 and 26, wherein the data structures have nodes 12 and 24. The collector "reads" (i.e. determines) the changes between the corresponding nodes.

allows configurable conflict resolution, which includes detection and resolution of update, uniqueness, and delete conflicts. Therefore, the combination of Holenstein in view of Souder, disclose preventing the change from occurring ([0010] and [0099], Holenstein).

Regarding Claims 9 and 21, the combination of Holenstein in view of Souder, disclose the method further comprising identifying nodes in the first data structure for which a change to the second data structure (Fig.1; [0025], lines 1-6, and [0036], lines 1-2, Holenstein) creates a collision to a software application maintaining the first data structure ([0134], lines 1-5, Holenstein).

7. Claims 8 and 20, are rejected under 35 U.S.C. 103(a) as being unpatentable over Holenstein (US Patent Application No. 20020133507) filed on March 29, 2002, in view of Souder (US Patent No. 5,806,074) filed on March 19, 1996, and further in view of Fujihara (US Patent Application No. 20020191452) published December 19, 2002.

Regarding Claims 8 and 20, the combination of Holenstein in view of Souder, disclose all of the claimed subject matter as stated above. However, the combination of Holenstein in view of Souder, are silent with respect to deleting empty nodes from the first data structure. On the other hand, Fujihara discloses

² Examiner Notes: The consumer "applies" (i.e. accesses) the changes passed from the collector, which

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deleting empty nodes from the first data structure ([0116-0117], Fujihara)³. It would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate Fujihara's teachings into the Holenstein in view of Souder system. A skilled artisan would have been motivated to combine as suggested by Fujihara at paragraphs [0015-0017], in order to maintain and manage a plurality of data structures more efficiently. As a result of the maintenance and management the data structure will be assured to have the least amount of traffic and calculation time.

8. Claims 10-12 and 22-24, are rejected under 35 U.S.C. 103(a) as being unpatentable over Holenstein (US Patent Application No. 20020133507) filed on March 29, 2002, in view of Souder (US Patent No. 5,806,074) filed on March 19, 1996, and further in view of "Robust Annotation Positioning in Digital Documents", by Gupta, Brush, Barger, and Cadiz, Published on September 22, 2000, referred to as "Gupta" hereinafter.

Regarding Claims 10, 22, and 28, the combination of Holenstein in view of Souder, disclose all of the claimed subject matter. However, Holenstein in view of Souder do not explicitly disclose the method wherein the collision criteria:

comes from the first data structure and passed to the second data structure. The transaction receiver verifies that the information was received from the corresponding data structure.

³ Examiner Notes: Further explanations about the node being empty if label with 0 (nil) can be found within paragraph [0084].

prohibits ink strokes from being added to a leaf node below a pinned node,

prohibits ink strokes from being removed from a leaf node below the pinned node,

prohibits adding leaf nodes below the pinned node,

prohibits removing leaf nodes below the pinned node, and

prohibits re-parenting of leaf nodes below the pinned node. On the other hand, Gupta discloses prohibits ink strokes from being added (pg.7, [5.3.1], lines 5-8, Gupta)⁴ to a leaf node below a pinned node (pg.4, [3.2], line 12, Gupta)⁵, prohibits ink strokes from being removed (pg.7, [5.3.1], lines 5-8, Gupta) from a leaf node below the pinned node (pg.4, [3.2], line 12, Gupta), prohibits adding (pg.7, [5.3.1], lines 5-8, Gupta) leaf nodes below the pinned node (pg.4, [3.2], line 12, Gupta), prohibits removing (pg.7, [5.3.1], lines 5-8, Gupta) leaf nodes below the pinned node (pg.4, [3.2], line 12, Gupta), and prohibits re-parenting (pg.6, [5.1.1], lines 11-14, Gupta)⁶ of leaf nodes below the pinned node (pg.4, [3.2], line 12, Gupta). It would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate Gupta's teachings into the Holenstein in view of Souder system. A skilled artisan would have been motivated combine as

⁴ Examiner Notes: "Same" means when the text does not move or change; this corresponds to no modifications such as adding or removing of other nodes. Also, ink strokes can be represented as nodes and nodes can be represented as ink strokes.

⁵ Examiner Notes: Anchor text is the text, which identifies the nodes position (pg.4, [3.2.1], lines 1-2, Gupta). The anchor text corresponds with pinned node, because the anchored text is unchangeable.

⁶ Examiner Notes: Prohibiting re-parenting corresponds to "orphaned", because if an annotation (i.e. node) is unable to find a location it is left without a parent (i.e. orphaned), which means it does not get a new parent node.

suggested by Gupta at page 2, column 2 lines 13-17, in order to limit where a stroke can be placed or either drop strokes when documents are changed, which ultimately enhances the performance of the system.

Regarding Claims 11-12,23-24, and 29-30, the combination of Holenstein in view of Souder, and further in view of Gupta, disclose the method wherein the collision criteria:

allows late ink strokes to be added to a leaf node below a pinned node under specified conditions (pg.7, [5.3.3], lines 1-3 and 9-14, Gupta)⁷,

prohibits ink strokes from being removed (pg.7, [5.3.1], lines 5-8, Gupta) from a leaf node below the pinned node (pg.4, [3.2], line 12, Gupta),

prohibits adding (pg.7, [5.3.1], lines 5-8, Gupta) leaf nodes below the pinned node (pg.4, [3.2], line 12, Gupta),

prohibits removing (pg.7, [5.3.1], lines 5-8, Gupta) leaf nodes below the pinned node (pg.4, [3.2], line 12, Gupta), and

prohibits re-parenting (pg.6, [5.1.1], lines 11-14, Gupta) of leaf nodes below the pinned node(pg.4, [3.2], line 12, Gupta).

9. Claims 25 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Holenstein (US Patent Application No. 20020133507) filed on March 29, 2002,

⁷ Examiner Notes: The changing of nodes in the updated document is considered "late" because the modification was not done in the original.

in view of Souder (US Patent No. 5,806,074) filed on March 19, 1996, and further in view of Neeman (US Patent No. 5,588,147) filed January 14, 1994.

Regarding Claim 25, Holenstein discloses a system comprising:

a first memory for storing a first data structure ();

a second memory for storing a second data structure ();

a processor for executing instructions stored on one or more computer readable media for performing a method of reconciling the first data structure stored in the first memory with a second data structure stored in the second memory, the method including:

determining which node of the second data structure has received a change from a corresponding node in the first data structure (Fig.1; [0025], lines 1-6, Holenstein);

for each node in the second data structure determined to have received a change from a corresponding node in the first data structure (Fig.1; [0027], lines 1-4, and [0036], lines 1-2, Holenstein),

attempting to access the corresponding node in the first data structure ([0052]-[0053], Holenstein);

when the corresponding node in the first data structure is inaccessible, preventing the change from occurring in the second data structure ([0157], lines 10-19, Holenstein). However, Holenstein is silent with respect to, when the corresponding node in the first data structure is accessible, determining, that the

change to the second data structure creates a mandatory collision. On the other hand, Souder discloses when the corresponding node in the first data structure can be accessed, determining, that the change to the second data structure creates a mandatory collision (column 11, lines 8-36, Souder). It would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate Souder's teachings into the Holenstein system. A skilled artisan would have been motivated to combine as suggested by Souder at column 5, lines 17-45, in order to present a system that allows configurable conflict resolution, which includes detection and resolution of update, uniqueness, and delete conflicts. Therefore, the combination of Holenstein in view of Souder, disclose preventing the change from occurring ([0010] and [0099], Holenstein). However, the combination of Holenstein in view of Souder, are silent with respect to when the corresponding node in the second data structure is accessible, determining, that the change to the second data structure creates a discretionary collision. On the other hand, Neeman discloses when the corresponding node in the second data structure is accessible, determining, that the change to the second data structure creates a discretionary collision (column 8, lines 31-36, Neeman). It would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate Neeman's teachings into the Holenstein and Souder system. A skilled artisan would have been motivated to combine as suggested by Neeman at columns 5 and 6, lines 66-67 and 1-6, in order to provide load balancing by having more than one copy of an object stored across

the system and availability by allowing multiple copies of important objects to be distributed across the system. As a result, by recognizing the possible collisions, it increases the fault resilience of the system. Therefore, the combination of Holenstein in view of Souder, and further in view of Neeman, disclose when the change to the second data structure creates a discretionary collision, determining that the discretionary collision is forbidden by collision criteria (column 8, lines 21-31, Neeman), when the discretionary collision is not forbidden by the collision criteria, making the change to the corresponding node in the first data structure (column 8, lines 37-47, Neeman), and when the discretionary collision is forbidden by the collision criteria, preventing the change from occurring ([0099], Holenstein).

Regarding Claim 27, the combination of Holenstein in view of Souder, and further in view of Neeman, disclose the method further comprising identifying nodes in the first data structure for which a change to the second data structure (Fig.1; [0025], lines 1-6, and [0036], lines 1-2, Holenstein) creates a collision to a software application maintaining the first data structure ([0134], lines 1-5, Holenstein).

10. Claim 26 is rejected under 35 U.S.C. 103(a) as being unpatentable over Holenstein (US Patent Application No. 20020133507) filed on March 29, 2002, in view of Souder (US Patent No. 5,806,074) filed on March 19, 1996, further in view

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of Neeman (US Patent No. 5,588,147) filed January 14, 1994, and further in view of Fujihara (US Patent Application No. 20020191452) published December 19, 2002.

Regarding Claim 26, the combination of Holenstein in view of Souder, and further in view of Neeman, disclose all of the claimed subject matter as stated above. However, the combination of Holenstein in view of Souder, and further in view of Neeman, are silent with respect to deleting empty nodes from the first data structure. On the other hand, Fujihara discloses deleting empty nodes from the first data structure ([0116-0117], Fujihara)⁸. It would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate Fujihara's teachings into the Holenstein, Souder, and Neeman system. A skilled artisan would have been motivated to combine as suggested by Fujihara at paragraphs [0015-0017], in order to maintain and manage a plurality of data structures more efficiently. As a result of the maintenance and management the data structure will be assured to have the least amount of traffic and calculation time.

11. Claims 28-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Holenstein (US Patent Application No. 20020133507) filed on March 29, 2002, in view of Souder (US Patent No. 5,806,074) filed on March 19, 1996, further in view of Neeman (US Patent No. 5,588,147) filed January 14, 1994, and further in view of "Robust Annotation Positioning in Digital Documents", by Gupta, Brush,

Barger, and Cadiz, Published on September 22, 2000, referred to as “Gupta” hereinafter.

Regarding Claim 28, the combination of Holenstein in view of Souder, and further in view of Neeman, disclose all of the claimed subject matter. However, Holenstein in view of Souder, and further in view of Neeman, do not explicitly disclose the method wherein the collision criteria:

prohibits ink strokes from being added to a leaf node below a pinned node,

prohibits ink strokes from being removed from a leaf node below the pinned node,

prohibits adding leaf nodes below the pinned node,

prohibits removing leaf nodes below the pinned node, and

prohibits re-parenting of leaf nodes below the pinned node. On the other hand, Gupta discloses prohibits ink strokes from being added (pg.7, [5.3.1], lines 5-8, Gupta)⁹ to a leaf node below a pinned node (pg.4, [3.2], line 12, Gupta)¹⁰, prohibits ink strokes from being removed (pg.7, [5.3.1], lines 5-8, Gupta) from a leaf node below the pinned node (pg.4, [3.2], line 12, Gupta), prohibits adding (pg.7, [5.3.1], lines 5-8, Gupta) leaf nodes below the pinned node (pg.4, [3.2], line

⁸ Examiner Notes: Further explanations about the node being empty if label with 0 (nil) can be found within paragraph [0084].

⁹ Examiner Notes: “Same” means when the text does not move or change; this corresponds to no modifications such as adding or removing of other nodes. Also, ink strokes can be represented as nodes and nodes can be represented as ink strokes.

12, Gupta), prohibits removing (pg.7, [5.3.1], lines 5-8, Gupta) leaf nodes below the pinned node (pg.4, [3.2], line 12, Gupta), and prohibits re-parenting (pg.6, [5.1.1], lines 11-14, Gupta)¹¹ of leaf nodes below the pinned node (pg.4, [3.2], line 12, Gupta). It would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate Gupta's teachings into the Holenstein, Souder, and Neeman system. A skilled artisan would have been motivated combine as suggested by Gupta at page 2, column 2 lines 13-17, in order to limit where a stroke can be placed or either drop strokes when documents are changed, which ultimately enhances the performance of the system.

Regarding Claims 29-30, the combination of Holenstein in view of Souder, further in view of Neeman, and further in view of Gupta, disclose the method wherein the collision criteria:

allows late ink strokes to be added to a leaf node below a pinned node under specified conditions (pg.7, [5.3.3], lines 1-3 and 9-14, Gupta)¹²,

prohibits ink strokes from being removed (pg.7, [5.3.1], lines 5-8, Gupta) from a leaf node below the pinned node (pg.4, [3.2], line 12, Gupta),

prohibits adding (pg.7, [5.3.1], lines 5-8, Gupta) leaf nodes below the pinned node (pg.4, [3.2], line 12, Gupta),

¹⁰ Examiner Notes: Anchor text is the text, which identifies the nodes position (pg.4, [3.2.1], lines 1-2, Gupta). The anchor text corresponds with pinned node, because the anchored text is unchangeable.

¹¹ Examiner Notes: Prohibiting re-parenting corresponds to "orphaned", because if an annotation (i.e. node) is unable to find a location it is left without a parent (i.e. orphaned), which means it does not get a new parent node.

prohibits removing (pg.7, [5.3.1], lines 5-8, Gupta) leaf nodes below the pinned node (pg.4, [3.2], line 12, Gupta), and
prohibits re-parenting (pg.6, [5.1.1], lines 11-14, Gupta) of leaf nodes below the pinned node(pg.4, [3.2], line 12, Gupta).

Response to Arguments

Applicant's arguments with respect to newly amended claims 7,19,and 25 have been considered but are moot in view of the new ground(s) of rejection.

Applicant argues, Gupta fails to cure the deficiencies of Holenstein and Neeman, and applicant also argues Gupta's anchor text does not have all of the same properties as pinned nodes; or more specifically, anchor text does not have the limitation of being unchangeable.

Examiner respectfully disagrees. To begin, Gupta was not relied upon to disclose the particular limitations, which were relied upon by Holenstein, Souder, and Neeman. Also, there are not believed to be any deficiencies within the Holenstein, in view of Souder, and further in view of Neeman references which need to be cured. Further, in response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., unchangeable) are not recited in the rejected claim(s). Although the claims are

¹² Examiner Notes: The changing of nodes in the updated document is considered "late" because the

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interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Applicant argues Gupta's "orphaned" is not a substitute term for "prohibits re-parenting" in the context.

Examiner respectfully disagrees. The term orphan is a well-known term within the art meaning a process whose parent has finished or been terminated. As such, once a node has been orphaned (i.e., without/lost parents), there is no possibility of getting the parents back. As a result, Gupta's disclosure at page 6, section 5.1.1 and 5.3.4. fully discloses the above argued limitation.

Applicant argues with respect to claims 11 and 12 that it pertains to "discretionary collision criteria", and therefore Gupta does not disclose "allowing ink strokes to be added to a leaf node below a pinned node under specified conditions" and does not "prohibit an activity (e.g., addition, removal) as in the instant application".

Examiner respectfully disagrees. To begin, the examiner would like to point out that claims 11 and 12 are dependent from newly amended claim 7, which focuses on the occurrence and prevention of a mandatory collision not a discretionary collision. As such, applicant's arguments present an indefinite situation, since the claims from which they depend do not discuss the collision being discretionary. As such, applicants further

arguments with reference to Gupta not disclosing particular limitations are deemed improper.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action.

Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

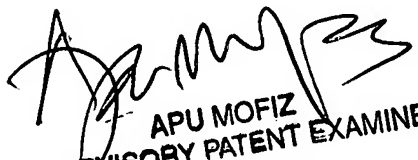
Points of Contact

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chelcie Daye whose telephone number is 571-272-3891. The examiner can normally be reached on M-F, 7:00 - 4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Apu Mofiz can be reached on 571-272-4080. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Chelcie Daye
Patent Examiner
Technology Center 2100
July 8, 2007


APU MOFIZ
SUPERVISORY PATENT EXAMINER